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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SOLD, JENA A	

ART UNIT	PAPER NUMBER
3765	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/581,898	HEXELS, GERD	
	Examiner	Art Unit	
	Jena A. Sold	3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-71* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *t6/5/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Applicant's oath discloses the duty to disclose in accordance with CFR 1.56(a) rather than CFR 1.56. Appropriate correction is required.

Specification

2. The disclosure is objected to because of the following informalities:.

Page 1, para. 11: Replace "they also liable to be lost" with --they are also liable to be lost --

Page 5, para. 43: Replace "innersock 2" with -- innersock 3 –

3. Additionally, applicant discusses hydrophilic membranes, such as polyester, polyether, polyester copolymer and the like (page 3, para. 20). However, polyester fibers and the like are hydrophobic as they only have about 0.4 percent water regain (J.J. Pizzuto's Fabric Science, p. 54). Applicant further acknowledges with said polyester membrane there will be no microporosity, likewise suggesting a hydrophobic

rather than hydrophilic membrane. Thus, without additional treatments of some sort, a polyester membrane will not be hydrophilic.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification fails to discuss an impregnated carbon layer (claim 51), specifically one additionally comprising silver, copper, chromium, polytetrafluoroethylene and mixtures thereof (claim 52).

Claim Objections

5. Claim 44 is objected to because it contains the limitation "wherein the membrane (7) comprises one of polyester, polyester and a mixture thereof."

6. Claim 47 is objected to because "tp" should be replaced with --to--.

7. Claim 67 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Specifically, claim 67 includes the limitation "wherein at least one of the outside leg part (1) and the inside leg part (3) are fabricated from a plurality of cut parts." However, claim 37, on which claim 67 is dependent, already requires the outside leg part to be fabricated from a plurality of cut parts.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 37-42, 44, 53- 55, 58, 60-62, 65-67 and 69-71, are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,571,387) in view of Pacanowsky et al. (US 4,809,447). Regarding claims 37 and 65-67, Williams discloses a sock construction comprising outer sock 22, present applicant's outside leg part, bladder 12, applicant's flexible, windproof and water-rejecting membrane, micro-spheres 23, present applicant's carbon layer, and a paper backing, applicant's inner textile ply, in combination present applicant's laminate (column 3, lines 1-30). Williams fails to disclose the outside leg part fabricated from a plurality of cuts or pieces, the seams sealed by a waterproof material. However, applicant discloses while the outersock 1 and innersock 2 can be fabricated from a plurality of cuts, they could also be woven or loop-formingly knit without seam (page 5, para. 43), thus disclosing the cut construction as non-critical to the applicant's invention. Additionally, Pacanowsky teaches a waterproof breathable sock fabricated from sole 12, applicant's sole part, attached to calf portion 14, applicant's shaft, and vamp portion 16, applicant's foot upper part, at seams 24 (column 2, line 68 – column 4, line 4). Pacanowsky further discloses

seams 24 are sealed with tape 38 (column 3, lines 37-43). Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to construct the entire sock garment of Williams – that is, all the layers or plies - according to the teachings of Pacanowsky because constructing a sock in pieces instead of as a circularly knit garment is easier and, thus, more cost-effective.

9. Regarding claims 38, 44 and 54, bladder 12, present applicant's membrane, comprises, for example polyurethane or elastomers made from polyesters, which provides a barrier against liquid chemical noxiants.

10. Regarding claim 39, Williams discloses inner sock 20, present applicant's inside leg part, located underneath the laminate (column 3, lines 10-13).

11. Regarding claim 40, Williams discloses inner sock 20 bonded to the inner surface 18 of bladder 12 (column 3, lines 10-13) and outer sock 22 additionally bonded to bladder 12 (column 3, lines 31-32).

12. Regarding claims 41 and 42, as previously discussed, Pacanowsky teaches a construction wherein sole 12, calf 14 and vamp 16 are sewn to one another, thus anticipating present applicant's plurality of plies sewn together. Specifically, Pacanowsky discloses shows the plies sewn together at seam 24 at the upper end of the sock, as well as in a foot tip region (see Figures 1 and 2).

13. Regarding claim 53, Williams discloses the thin pliant thermoplastic bladder may be made from any number of materials, including elastomers made from cellulose derivatives, present applicant's cellophane (column 3, lines 45-51).

14. Regarding claim 55, the carbon layer comprises a multiplicity of activated carbon micro-spheres 23 (column 3, lines 21-23).

15. Regarding claim 58, Williams discloses outer sock may be constructed from natural fibers such as wool or synthetic fibers such as polyester (column 3, lines 16-20).

16. Regarding claims 60-62 and 71, inner sock 20 is of standard construction and preferably made from knitted natural or synthetic fibers. As all natural animal and vegetable fibers are hydrophilic (J.J.Pizzuto's Fabric Science, p. 25), Williams anticipates present applicant's hydrophilic inside leg part. Additionally, as Williams discloses inner sock 20 may also be made utilizing Coolmax®, a polyester fabric (column 4, lines 45-57), Williams anticipates present applicant's inside leg part comprising one of polypropylene, polyamide, polyester and mixtures thereof.

17. Regarding claim 66, sole 12 of Pacanowsky is equivalent to applicant's sole part, calf portion 14 is equivalent to applicant's shaft and vamp portion 14 is equivalent to applicant's foot upper part, as visible in Figures 1 and 2.

18. Regarding claims 69 and 70, as previously discussed, Pacanowsky teaches seams 24 sealed with tape 38, wherein said tape comprises a waterproof material, such as Gore-Seam™ tape (column 3, lines 41-43), thus anticipating present applicant's seam-sealing tape comprising a waterproof material, as well as present applicant's waterproof adhesive.

19. Claims 48, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,571,387) in view of Pacanowsky et al. (US 4,809,447) and in

further view of Tremblay-Lutter et al. (US Pub. No. 2003/0229936). Regarding claims 48 and 51, Williams discloses a sock construction, as previously including a layer of carbon activated micro-spheres 23, present applicant's carbon layer, for protection to the user against exposure to various chemical vapors, and hazardous agents. Williams fails to disclose the sock garment wherein the carbon layer comprises a woven or knit fabric material or wherein the carbon layer is impregnated. Tremblay-Lutter teaches a chemical vapor protective garment, including activated carbon socks, wherein the adsorbent carbon is provided in one of two ways: either as an impregnated stretch-nylon or a commercially available activated carbon knit (page 3, para. 29). Thus, Tremblay-Lutter teaches providing a carbon adsorbent layer in a sock garment in a loop-drawingly knit material (claim 48) and wherein the carbon layer is impregnated (claim 51). It would have been obvious to one having ordinary skill in the art to replace the layer of carbon activated micro-spheres of Williams with either carbon layer construction taught by Tremblay-Lutter because any carbon layer effectively adsorbs chemical agents and toxins and incorporating said carbon into a fabric enhances ease of construction.

20. Regarding claim 50, Tremblay-Lutter discloses the carbon containing fabric having a total thickness not exceeding 1.0 mm, thus anticipating present applicant's carbon layer in a range from 0.2 to 1.0 mm (page 4, claim 2).

21. Claims 49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,571,387) in view of Pacanowsky et al. (US 4,809,447), in further

view of Tremblay-Lutter et al. (US Pub. No. 2003/0229936) and in further view of von Blucher (US Pub. No. 2005/0076418). Williams in view of Pacanowsky and in further view of Tremblay-Lutter et al. discloses the invention substantially as claimed and as previously discussed including a sock having either a knit carbon layer or an impregnated carbon layer. Regarding claim 49, Williams in view of Pacanowsky and in further view of Tremblay-Lutter fails to disclose the active surface area of said carbon layer, specifically that said active surface area is in a range from 1000 to 1200 m^2/g. Von Blucher teaches protective handwear wherein carbon adsorption layer 5 has a specific surface most preferably in the range of 800 to 1500 m^2/g. Additionally, present applicant's disclosure fails to reveal any criticality in the aforementioned surface area, nor does it disclose said surface area range to offer any particular advantage, serve any particular purpose, or solve any particular problem. Thus, it would have been obvious to one having ordinary skill in the art to provide the aforementioned carbon layer surface area because said surface area allows for sufficient protection against chemical agents while maintaining the breathability of the garment (page 5, para. 48).

22. Regarding claim 52, Williams in view of Pacanowsky and in further view of Tremblay-Lutter fails to disclose the impregnated carbon layer comprising one of silver, copper, chromium, polytetrafluoroethylene and mixtures thereof. Von Blucher teaches impregnating adsorbent carbon layer 5 with at least one catalyst, preferably copper or silver. Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention for the carbon impregnation of Tremblay-Lutter to include copper or

silver because said catalysts increase the adsorption efficiency or adsorption capacity of the garment (page 5, para. 51).

23. Claims 37, 43, 45-47, 59, 64 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pacanowsky et al. (US 4,809,447) in view of Williams (US 6,571,387). Pacanowsky discloses a waterproof breathable sock comprising sole 12, applicant's sole part, attached to calf portion 14, applicant's shaft, and vamp portion 16, applicant's foot upper part, at seams 24 (column 2, line 68 – column 4, line 4), said seams 24 sealed with tape 38 (column 3, lines 37-43). The sock additionally comprises a three layer laminate including outer layer 28, present applicant's outside leg part, middle layer 30 of expanded PTFE, present applicant's flexible, windproof and water-rejecting membrane, and inner layer 36, present applicant's inner textile ply. Middle layer 30 and inner layer 26, in combination, comprise present applicant's laminate 2. Pacanowsky, however, fails to disclose a carbon layer, comprising carbon in fibrous or particulate form, disposed underneath said membrane. Williams teaches a protective sock garment comprising an outer sock 22, a bladder or membrane 12 and an inner sock 20. Williams additionally teaches carbon micro-spheres 23 attached to the membrane layer of the sock. Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a carbon micro-sphere layer to the laminate of Pacanowsky, as taught by Williams, because activated carbon micro-spheres adsorb hazardous chemicals and toxins to which the wearer might be exposed (column 1, lines 10-12).

24. Regarding claims 43 and 45-47, Pacanowsky discloses middle layer 30 comprising expanded polytetrafluoroethylene or ePTFE (Gore-tex®), a microporous breathable material with pores pervious to water vapor but resistant to permeation of biological and chemical noxiants.

25. Regarding claim 59, Pacanowsky discloses inner layer 26, present applicant's textile ply, comprising a nylon tricot knit, present applicant's loop-formingly knit fabric.

26. Regarding claims 64 and 68, Pacanowsky discloses neither the type of stitch nor the type of yarn or thread by which the cuts or garment pieces are joined together. Present applicant's disclosure, however, fails to reveal any criticality in the stitch type, nor does it disclose the flatlock or zigzag stitch to offer any particular advantage, serve any particular purpose, or solve any particular problem as stated in the specification. Similarly, applicant's disclosure fails to reveal any criticality in the attachment of said garment pieces, and thus the attachment of the inside leg part to at least one of the other plies, via a fleecy spun yarn, rather than any other type of yarn or thread. Thus, it would have been obvious to one of ordinary skill in the art to construct the sock of Pacanowsky with any type of yarn and any type of stitch capable of effectively holding said garment pieces together, especially with fleecy yarn forming a flatlock stitch because fleecy yarns are soft and durable and flatlock stitches create flat seam allowances, in combination enhancing the comfort of the user.

27. Claims 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 6,571,387) in view of Pacanowsky et al. (US 4,809,447) and in

further view of von Blucher. Williams in view of Pacanowsky discloses the invention substantially as claimed and as previously discussed including a sock garment having a layer of carbon activated micro-spheres 23, present applicant's carbon layer, for protection to the user against exposure to various chemical vapors, and hazardous agents. Williams, however, fails to disclose said sock garment wherein the carbon layer comprises a knit fabric of activated carbon fibers. Von Blucher teaches protective handwear including an activated carbon adsorption layer for providing excellent protection against toxic chemical agents (Abstract). Specifically, adsorption layer 5 may consist of activated carbon fibers, especially in the form of activated carbon cloths, for example activated carbon fiber knitted fabrics (page 5, para. 49), present applicant's knit fabric of activated carbon fibers. Thus, it would have been obvious to one having ordinary skill in the art at the time of the invention to replace the layer of carbon activated micro-spheres of Williams with the knit activated carbon fabric of von Blucher because any carbon layer effectively adsorbs chemical agents and toxins and said knit activated carbon fabric enhances the wearing comfort of the garment by acting as an immediate store for and buffer against moisture and water (page 5, para. 47).

28. Claim 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pacanowsky et al. (US 4,809,447) in view of Williams (US 6,571,387) and in further view of Woodson et al. (US 5,57,791). The inside leg part of Pacanowsky is capable of, on the upper side thereof, being turned over at least one of the other plies. Pacanowsky, however, fails to disclose said inside part being longer than the other

plies. Applicant, however, fails to disclose any criticality in the aforementioned structure. As visible in Figure 1, Woodson et al. discloses a sock 10 including outer layer 14 and inner layer 16 which is longer than layer 14 and, as visible in Figure 2, is capable of being folded downwardly to cover the top edge of said outer layer 14 (column 2, lines 40-46). Thus it would have been obvious to one having ordinary skill in the apparel arts to construct the inner layer having a greater length than the outer layer because, in cuffing said inner layer over said outer layer, a storage compartment is created, allowing the wearers to secure items therein (column 3, lines 41-45).

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and is cited on form 892 enclosed herewith.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jena A. Sold whose telephone number is (571) 272-8610. The examiner can normally be reached on Mon. - Fri. 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Welch can be reached on (571) 272-4996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAS

/Alissa L. Hoey/
Primary Examiner, Art Unit 3765